

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 30, 2007

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Michael J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending March 30, 2007

DNFSB Site Activity: Board members Eggenberger, Mansfield, Bader, Brown, and Winokur were at LLNL this week to meet with the Livermore Site Office and LLNL management to discuss current safety issues. The Board was supported by staff members Fortenberry, Tontodonato, and Matteucci. On March 28, the full Board was briefed on a wide range of nuclear safety issues including Plutonium Facility safety posture, safety initiatives underway in the Nuclear Material Technology Program (NMTP), LLNL support for Pantex, and Integrated Safety Management. The Board also received briefings on the implementation of the Plutonium Facility documented safety analysis (DSA) to comply with the Nuclear Safety Management rule (10 CFR Part 830).

Board members Bader, Brown, and Winokur conducted walk-through reviews of several LLNL facilities. On March 27, the Board members and staff reviewed the Radiography Facility, Hardened Engineering Test Building, Tritium Facility, and Plutonium Facility. On March 29, the Board members and staff visited Site 300, radioactive and hazardous waste facilities and the National Ignition Facility.

External Audit: This week, the Site Representative met with auditors from the DOE Office of Inspector General (IG). The IG auditors are in the survey phase of a potential audit of LLNL's performance in resolving issues from safety reviews. The Site Representative discussed the status of nuclear safety issues and recent initiatives by the Board to improve the safety posture of LLNL nuclear facilities. The IG team was particularly interested in the events leading to the stand-down of the Plutonium Facility in January 2005, and the process used to resume limited operations in October 2005, and full operations in May 2006.

Hardened Engineering Test Building Activity: A radiation measurement activity was conducted in the Hardened Engineering Test Building this week. The activity consisted of removal of plutonium from nested containers, handling of encapsulated plutonium, and passive radiation measurements. The fissile material handlers (FMH) and hazard controls technician performed the handling activity in a manner consistent with that required in the Plutonium Facility. The requirements of the work permit – including survey requirements, personal protective equipment, and dosimetry requirements – were adhered to during performance of the work. However, the implementation of criticality safety requirements was lacking. One of the criticality safety requirements regarding allowable material covering the plutonium was not formally verified prior to the activity. The test plan referenced in the work permit limited the maximum thickness of a polyethylene shell surrounding the plutonium. Implementation of the procedure did not adequately verify that the polyethylene shell being used met the procedural requirement. Based on the Site Representative's observation, the Facility Manager directed a FMH to measure the shells. The allowable thickness was not exceeded.